

What is claimed is:

1. An air intake device for an internal combustion engine, said system comprising:  
a primary inlet duct having a front end provided with an inlet opening and an outlet  
5 end, said outlet end of said primary duct being in fluid communication with at least one  
cylinder of said internal combustion engine; and  
a secondary inlet duct having an inlet end provided with an inlet opening and a rear end  
closed with a reflector wall having a hole therethrough, said inlet opening of said secondary  
inlet duct receiving intake air;  
10 said primary inlet duct extending through said hole in said reflector wall of said  
secondary inlet duct so that a portion of said primary inlet duct is disposed within said  
secondary inlet duct in a radially spaced relationship forming a double-tube chamber within  
said secondary inlet duct including a resonant cavity defined between said primary inlet duct  
and said secondary inlet duct;  
15 said double-tube chamber is sized so as to generate sound waves enhancing  
propagation of an intake air flow toward said at least one cylinder of said internal combustion  
engine through said primary inlet duct.
2. The air intake device as defined in claim 1, wherein said inlet opening of said  
20 secondary inlet duct receives said intake air through an air filter connected to said inlet end of  
said secondary inlet duct.

3. The air intake device as defined in claim 1, wherein both said primary inlet duct and said secondary inlet duct have substantially circular cross-section.

4. The air intake device as defined in claim 3, wherein said cross-section of both said  
5 primary inlet duct and said secondary inlet duct is substantially constant along the length thereof.

5. The air intake device as defined in claim 1, wherein said reflector wall is substantially orthogonal to an outer peripheral surface of said rear end of said secondary inlet  
10 duct.

6. The air intake device as defined in claim 1, wherein both said primary inlet duct and said secondary inlet duct and said reflector wall are made of a substantially rigid material.

7. The air intake device as defined in claim 7, wherein said material is aluminum or  
15 aluminum alloy.

8. The air intake device as defined in claim 1, wherein said resonant cavity is substantially cylindrical in shape and has a front open end and a rear end closed by said  
20 reflector wall.

9. The air intake device as defined in claim 1, wherein said primary inlet duct is rigidly fixed to said secondary inlet duct.

10. The air intake device as defined in claim 9, wherein said primary inlet duct is  
5 rigidly fixed to said secondary inlet duct through said reflector wall.